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Land Degradation Neutrality in Turkmenistan

Report by Nikolay Nikolayev

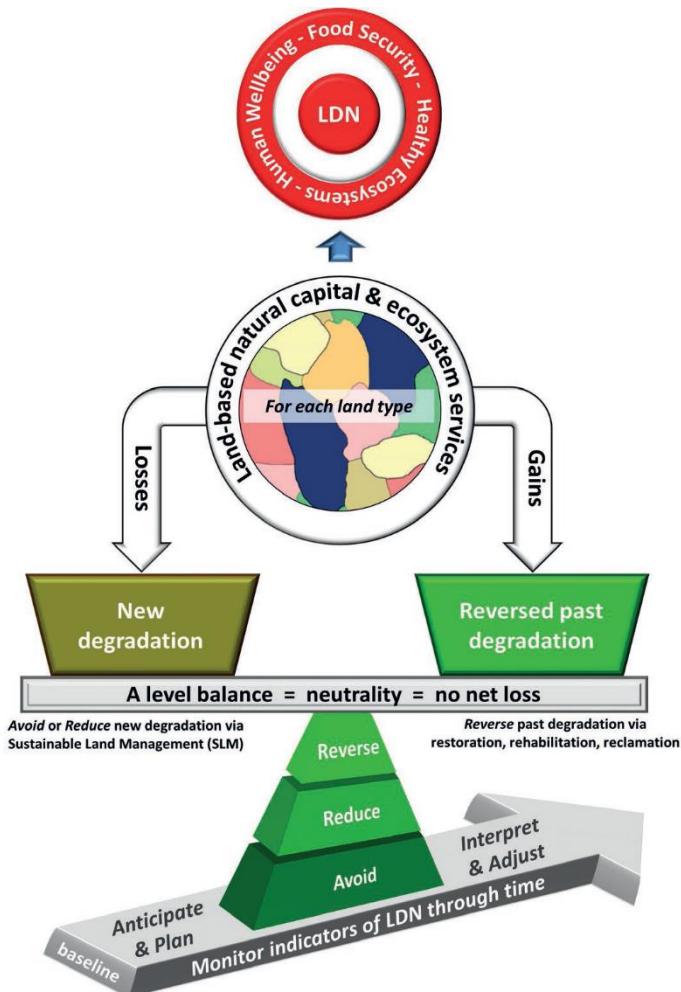
Land Degradation Neutrality

The UN Convention to Combat Desertification (UNCCD) defines the Land Degradation Neutrality as “a state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems.

Land Degradation Neutrality is an initiative meant to mitigate and reduce continued processes of land's productivity loss under degradation. LDN is based on the idea of achieving and sustaining balance between land degradation and land restoration measures.

LDN's goals:

- Support and improve ecosystem services
- Support and improve productivity of agricultural lands to ensure food security
- Ensure sustainability of land use and increase land-dependent population's welfare
- Synergize with other goals and tasks in environment and land resources
- Motivate authorities responsible for sustainable land use.



Introducing LDN

LDN Planning

LDN's definition implies balancing benefits from land use and sustainability costs/land reproduction recovery. Method of LDN introduction can be landscape (based on a type of land use) or basin one (considering watershed). The scale can be national, regional, or local. To implement the LDN principles, the new active approach is being used, in which the LDN tasks connects with the existing land use planning.

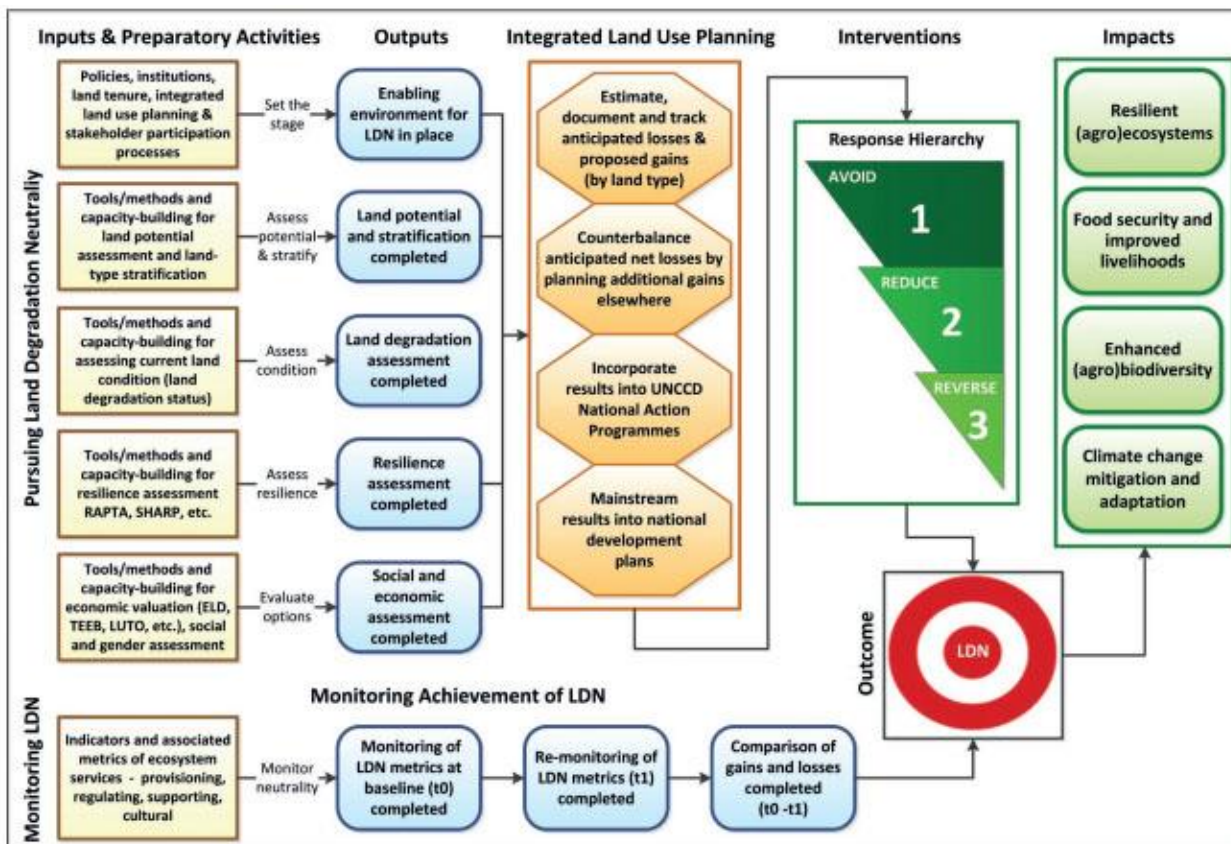
To achieve LDN, and especially soils, one we must restore as much land as has been degraded to sustain food security capacities

Introducing LDN measures

Prior land condition analysis before planning LDN measures is based on:

- Land degradation assessments
- Economic evaluations of damage from degradation
- Assessment of land resource potential and risks (draughts etc.)
- Land restoration capacity assessment (degradation reduction)

LDN response measure hierarchy directs decisionmakers to plan LDN measures. Hierarchy of the response measures *Exclude* > *Reduce* > *Reverse* land degradation is based on the understanding of the fact that "mitigation is better than restoration".



Application of LDN principles in Turkmenistan

Preliminary assessments

From 2015 to 2020, 565 417 thousand hectares in irrigated lands and 3379 657 thousand hectares of pastureland (per calculation algorithm recommended by GM UNCCD) were degraded. Within this period (2015-2020) the share of the degraded lands has reached 1.20% in irrigated lands and 7.19% in pasture lands.

Currently, degradation affects 94.4 thousand hectares in irrigated lands and 563.6 thousand hectares in pastureland.

Natural degradation factors are precipitation, temperature, wind, draught, landslides, water erosion, light soils deflation, fires, atmospheric transfer of salt and dust, greenhouse gases etc. In recent years the degradation process is compounded by frequent recurrence of dry winds and droughts, increase in salt and dust aerosol removal from the dried bottom of the Aral Sea and increase in its spread.

Land degradation and desertification as its subsequence are induced by anthropogenic factors:

- Developing new lands without appropriate ameliorative preparations, incorrect application of agrotechnique (lack of cropping)
- Lack of modern water-saving technologies that leads to highly inefficient use of irrigation water
- Unsatisfactory technical condition of irrigation and drainage networks, which leads to waterlogging in lands and pastures
- Excessive use of pastures and cutting of pasture trees and bush
- Expansion of mining and fossil extraction areas, infrastructure without saving environmental parameters in homeostatic boundaries.

It is worth noting here that there exist human activities needed for sustainable and safe social development that remain unimplemented because of their commercial infeasibility, and there exist commercially valuable human activities, which cause direct or indirect harm to environment.

Integration with international programs

Measures to combat land degradation, desertification, to save biodiversity are closely interconnected and regulated by Rio conventions. Normally, various state bodies implement the conventions in isolation from each other. Proposals and recommendations on joint actions and cooperation developed in the frameworks of Rio conventions will ensure improvement in coordination and increase in efficiency of planned environment protection measures in strengthening ecosystem's integrity to preserve nature ecosystems of the country and incorporating SDGs into the national economy.

Close relation between desertification, biodiversity loss, climate change, simultaneous implementation of UNCCD, UNCBD, UNFCCC may have multiplier effect (emergence) and bring many benefits (synergy of Rio conventions). Especial attention shall be given to strengthening ecosystem integrity to save nature ecosystems under climate change conditions. Although the climate change may increase the degree of an aridness and desertification risk in many areas, its impact on services caused by biodiversity loss, and accordingly desertification is hard to predict.

National strategy of Turkmenistan on climate change points to renewal of the National Action Program to combat desertification as one of the required measures to strengthen capacities to mitigate desertification consequences. One of the top priorities of agriculture's adaptation

to climate change is the development of plans to combat desertification, salination and restoration of soils, and further use of marginal lands. Relevance of the program's renewal stems from neutralization of land degradation, which results from the decisions of the UN's Sustainable Development Conference (Rio+20) and based on a critical idea, which implies that inaction is vastly more expensive than action.

National strategy of Turkmenistan on climate change envisages preparation of the National Plan to overcome draught impacts, which must become inseparable part of the National Plan to combat desertification.

Voluntary targets

UNCCD's national working group has identified tentative Land Degradation Neutrality targets at the national level and measures to achieve those in the future:

- By 2025 develop and have approved at the government level renewed National Action Program to combat desertification envisaging in perspective an inventory of soils and land resources with the detailed characteristics of irrigated and pastureland in the country (within the framework of the National social and economic development program 2025-2052)

Consequential implementation of the plan to combat desertification will require establishing permanent secretariat or national desertification combat center. This envisions legal status with an appropriate structure and entrusting it with the function to coordinate (synergy with Rio conventions) and control to implement articles of UNCCD at the regional level.

- By 2025 to ensure greening of desert territories, irrigated lands, and populous residential places - areas totaling 160 thousand hectares. (Within the frames of the Forest Program)
- *Afforest and create new forest plantations of deciduous trees, coniferous trees, vineland, and desert plants of 3 million saplings per year.*
- Minimize negative impact of Aral crisis in the territories of Zaunguz part of the Karakum desert by 2025 in the frames of National Aral Program.

Improve permanent national environmental monitoring system of the environment's essential domains (atmospheric air, soil, water resources) by developing appropriate bylaws to the existing governing legislations

Proposed LDN targets and measures to achieve those at the national level were presented at the seminar for the national stakeholders and perceived as relevant and compliant with the state policy of sustainable land use and adequately implementable in the future.

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